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PROCEEDINGS
OF
THE ROYAL IRISH ACADEMY.

1838—1839.

No. 14.

November 12.

SIR WM. R. HAMILTON, President, in the Chair.

Rev. Matthew Horgan; George Alexander Frazer, Esq.;
Sir Joseph O'Halloran, K. C. B.; and Halliday Bruce,
Esq., were elected Members.

Miss Caroline Herschel was elected an Honorary Member.

Sir W. Betham read a paper in answer to certain objections made to the statements in his former papers on Etruscan Mirrors, and on the fifth Eugubian Table.

Professor Kane read a note on the Theory of the Ethers.

In a late number of the *Annalen der Pharmacie*, Professor Liebig asserted that Dr. Kane should relinquish his claim to the discovery of the Ethyl Theory, in favour of Berzelius, on two grounds,—first, that Dr. Kane's view was not originally more definite than that of Dumas, and did not possess the completeness in which it was brought forward by Berzelius; and second, that Dr. Kane had taken no part in the subsequent discussions about the theory, had on many occasions shown indifference towards its establishment, and fluctuated between the old and new views. In the notice submitted to the Academy, Dr. Kane undertook to show the incorrectness of Professor Liebig's observations.

The idea thrown out by Dumas, to which Liebig alludes, was, that ether might be considered as a base, and the acid ethers as salts of that base. This idea Dumas himself, on further consideration, rejected, and assumed ether to be a hydrate of olefiant gas, which he made the basic element in the acid ethers, thus rejecting the form $C_4H_5O + \text{acid}$, and taking $HO + (C_4H_4 + \text{acid})$ as the foundation of all his subsequent researches. The sense in which Dumas considered ether as a base, was the same as that in which chemists regard the vegetable alcalies as bases,—that is, bodies which neutralize acids and form salts,—without seeking more profoundly into their constitution, or involving any hypothesis; whilst the essence of the views propounded by Dr. Kane and Berzelius consisted in considering ether as the oxide of a peculiar compound radical (*Ethyl. Etherium*) C_4H_5 , resembling the ammonium of the ammonia series,—an idea which Dumas never thought of proposing at all, and indeed one which the state of science, at the time of his researches on the ethers, could scarcely permit him to conceive.

So far from the Ether Theory being less complete, as promulgated by Dr. Kane, than when proposed by Berzelius, Dr. Kane asserted the reverse to be really the case, for it was only after Liebig himself had modified Berzelius' views, that the continental theory became identical with that previously brought forward in Dublin,—Berzelius having destroyed the unity of the theory by making alcohol $C_2H_3 + O$, which we now know to be a totally different substance, and Liebig having shown that it should be considered, $C_4H_5O + HO$, which it had always been considered in the theory proposed by Dr. Kane. Thus in the only point in which the theories differed, the form of Berzelius was the less complete of the two.

Dr. Kane has, since the promulgation of that theory, been induced, from the results of researches in other departments, to suspend his implicit belief in its sufficiency. Having ad-

vanced in the history of the ammoniacal combinations an important stage beyond the ammonium theory of Berzelius, it becomes of great interest that the nature of the ethers should be investigated with the aid of the lights furnished by this novel analogical point of view. This Dr. Kane purposes to do; and in the mean time, while he looks upon the Ethyl Theory as the most consonant to all facts at present known, and while, consequently, he will use on ordinary occasions its language and formulæ, he holds himself free of all implicit belief in any theories, which might only serve to embarrass him in his future investigations.

Dr. Kane grants fully to the continental chemists the honour of having developed the detailed evidence for the truth of the Ethyl Theory, so far as it has been proved, and claims no share whatsoever in that meritorious work. But he cannot abandon his claim to having been the first to suggest the theory; and he affirms that in the form in which he brought it forward, it was not merely more complete than that of Dumas, but even than that of Berzelius, and in fact identical with that now held by Liebig, Berzelius, and most of the continental and British chemists.

DONATIONS.

Transactions of the Royal Academy of Sciences of Copenhagen, Vols. I to VII. Presented by the Society.

Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg. 6me Serie. *Sciences Mathématiques, Physiques et Naturelles*. 6 Tomes. Presented by the Academy.

Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg. 6me Serie. *Sciences Politiques, Histoire, Philologie*. 3 Tomes. Presented by the Academy.

Mémoires présentés à l'Académie Impériale des Sciences de St. Pétersbourg par divers Savans, et lus dans ses Assemblées. 3 Tomes, et 1re et 2me Livraisons du Tome Quatrième Presented by the same.

Recueil des Actes de la Séance Publique de l'Académie Impériale des Sciences de St. Pétersburg, tenue le 29 Décembre, 1837. Presented by the same.

Comptes Rendus Hebdomadaires des Seances de l'Académie des Sciences. Par MM. les Secretaires Perpetuels. No. 23, 1838; premier Semestre. Nos. 1—16; second Semestre. Presented by the Academy.

Memoires de la Société Géologique de France. Tome Troisième. Première Partie. Presented by the Society.

Bulletin de la Société Géologique de France. Tome IX. Feuilles 6—19. Presented by the Society.

Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Tome VIII. 1re partie. Presented by the Society.

Abhandlungen der Königl. Akademie der Wissenschaften zu Berlin. Aus dem Jahre, 1836. Presented by the Academy.

Bericht über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin. Aus dem Jahre, 1837. Presented by the same.

Bericht über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin aus dem Jahre, 1838. Presented by the same.

Discurso Lido em 15 de Maio de 1838, na Sessão Publica da Academia Real das Sciencias de Lisboa. Por Joaquim José da Costa de Macedo. Presented by the Chevalier de Macedo.

Transactions of the American Philosophical Society. Vol. VI. Part I. New Series. Presented by the Society.

Journal of the Franklin Institute of the State of Pennsylvania. New Series. Vol. XXI. Presented by the Franklin Institute.

Archæologia; or Miscellaneous Tracts relating to Antiquity. Published by the Society of Antiquaries of London. Vol. XXVII. Presented by the Society.

Proceedings of the Royal Society. No. 33. Presented by the Society.

Proceedings of the Geological Society of London. Vol. II. No. 56. Presented by the Society.

The Journal of the Royal Asiatic Society of Great Britain and Ireland. No. 9. Presented by the Society.

Catalogue of the Chinese Library of the Royal Asiatic Society. Presented by the same.

Report of the Seventh Meeting of the British Association for the Advancement of Science; held at Liverpool, in September, 1837. Vol. VI. Presented by the Association.

Ordnance Maps of the County of Westmeath, in forty-two Sheets, including the Title and Index. Presented by his Excellency the Lord Lieutenant.

Map of the County of Mayo, with Sections, Views, Levels, Heights of the Hills, and Mountains, &c. &c. By William Bald, F.R.S.E. &c. Civil Engineer. Presented by the Author.

Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandling og dets Medlemmers Arbejder fra 31 Mai 1836, til 31 December, 1837. Af Etatsraad og Professor H. C. Orsted. Presented by the Academy of Sciences of Copenhagen.

Observations Ostéologiques sur l'Appareil Costal des Batraciens. Par. Ch. Morren. Presented by the Author.

The same Author presented also the following papers to the Academy:—

Récherches Physiologiques sur les Hydrophytes de la Belgique. Premier Mémoire: Histoire d'un Genre Nouveau de la Tribu des Confervies, nommé Aphanizomène.

Recherches sur le Mouvement et l'Anatomie du Stylidium Graminifolium.

Les Siècles et les Légumes, ou quelques Mots sur l'Histoire des Jardins Potagers.

De la Spécialité des Cultures propres aux établissements

Horticoles de Liège, et de l'Influence de la division du Travail en Horticulture.

Horticulture et Philosophie.

Considérations sur le Mouvement de la Sève des Dicotylédones, communiquées à l'Académie Royale de Bruxelles.

Note sur le Développement des Tubercles Didymes.

Notes sur la Catalepsie des Dracocephalum Austriacum et Moldavicum.

Recherches sur la Catalepsie du Dracocephalum Virgimanum.

Observations sur l'Anatomie et la Physiologie de la Fleur du Cereus Grandiflorus.

Observations Anatomiques sur la Congélation des Organes des Vegetaux.

Notice sur la Circulation observée dans l'Ovule, la Fleur et le Phorranthe du Figuier.

Note sur l'Effet Pernicieux du Duvet du Platane.

Adrien Spiegel. Extrait d'une Histoire inédite de la Botanique Belge depuis les temps les plus reculés jusqu'à nos jours.

Essais sur l'Hétérogénie Dominante dans lesquels on examine l'Influence qu'exerce la lumière sur la Manifestation et les développements des êtres organisés dont l'origine a été attribuée à cette prétendue génération directe, spontanée ou équivoque.

Développemens et Recherches de Mathématiques élémentaires. Par. I. N. Noel. Presented by the Author.

Documents and Records illustrating the History of Scotland, and the Transactions between the Crowns of Scotland and England, preserved in the Treasury of her Majesty's Exchequer. Vol. I. Presented by the Commissioners of the Public Records of the Kingdom.

Clinical Lectures, delivered during the Sessions of 1834-5 and 1836-7. By Robert J. Graves, M. D., M.R.I.A. Published in America. Presented by the Author.

Magnetic Observations made during the Voyages of H. M. Ships Adventure and Beagle, 1826-1836, discussed by Major Sabine, R.A., F.R.S. Presented by Major Sabine.

Flora Batava. By H. C. Van Hall. Nos. 114 and 115. Presented by the Author.

November 30. (Stated Meeting.)

SIR WM. R. HAMILTON, A. M., President, in the Chair.

The President read the following letter which had been addressed to him by M. Neumann of Königsberg, on some points connected with the history of the Laws of Crystalline Reflexion.

MONSIEUR,

Le haut prix que j'attache à votre suffrage et à celui de l'illustre Académie, à laquelle vous présidez, et l'honorable mention, que vous avez voulu faire de mon mémoire sur la théorie de la lumière dans la séance de cette Académie du 25 Juin, m'engagent à vous adresser la lettre suivante. Vous avez donné dans cette séance un jugement dans la question de priorité, qui pouvait s'élever entre Mr. Mac Cullagh et moi par rapport à la découverte des lois suivant lesquelles la lumière est réfléchi et réfractée par des milieux cristallins ;—j'ai l'honneur de vous communiquer dans ce qui suit quelques faits et quelques réflexions fondées sur ces faits, et qui auraient été peut-être de quelque influence sur ce jugement.

Au commencement de l'année 1833 j'ai communiqué à Mr. Seebeck de Berlin non seulement l'ensemble des principes de ma théorie tels qu'ils se trouvent imprimés dans le § 2. de mon mémoire, mais j'avais illustré encore ces principes par leur application aux milieux non cristallins. En même tems j'ai annoncé à Mr. Seebeck, que les résultats tirés de ces principes par rapport aux